Submitted by: Paul Meyers, Julia Butler Hansen Refuge for Columbian White-tailed Deer, Willipa National Wildlife Refuge Complex

Contact information: Julia Butler Hansen NWR
P.O. Box 566
Cathlamet, WA 98612
P) 360/795-3915
F) 360/795-0803
paul_meyers@fws.gov

1. Project Title: Assessment of Body Condition in Columbian White-tailed Deer
2. Primary Responsible Individual: Paul Meyers
3. Project objective(s): Provide a baseline of body condition for Columbian White-tailed deer (CWTD) on refuge lands.
4. Methods: Captured CWTD will be measured for percent body fat using a portable ultrasound (Cook et al. 2006, 2010, Stephenson et al. 2002). Data will be collected on deer that are captured during translocation efforts to accumulate a baseline index. Data will be compared among herds and correlated with fawn recruitment and population change. Data will also be compared to similar data collected on herds outside of the lower Columbia River population as they become available.
5. Timeline: Purchase of equipment will occur in FY 2012. Monitoring of deer body condition will occur opportunistically after equipment is available. Funding is requested for the purchase of equipment only. Subsequent monitoring will be performed by the refuge. Monitoring of this data will continue over the next 2–5 years.
6. Funding Priorities:

   5, Purchase of Equipment. We wish to purchase the key equipment needed to monitor body condition. Subsequent monitoring will be performed by the refuge.

   1, Collection of Baseline Data. This project will be used to monitor current body condition and create a baseline measure. These data can then be used to compare future changes and differences among herds.

   2, Adaptive Management—evaluate effectiveness of management actions. Currently we conduct significant vegetation management. The effect of these activities may take several years to show up in population numbers. This slows the adaptive management process. Being able to track a body condition index as it relates to habitat management would allow us

to more quickly assess our effect on deer and increase our ability to alter our management strategy.

7. Project justification: The lower Columbia population of Columbian White-tailed deer is an endangered population, and this project will provide information on effects of our management decisions as well as long-term herd health. There are two secure, viable subpopulations in the Lower Columbia herd, and they both occur on the Julia Butler Hansen NWR. In addition, 40% of the entire population occurs on the refuge. The CCP outlines the goal of reaching 125 animals for both the Mainland and Tenasillahe units. Currently, the population is below these levels. One theory behind low fawn recruitment and low overall numbers is poor body condition due to a shortage of food resources. By looking at body condition, we may gain insight into the underlying cause of low overall numbers.
8. Refuge decision making: Our current habitat plan proposes to restore more than 200 acres of pasture habitat at JBH over the course of the next 4 years. As acreages come under restoration, we wish to monitor any changes in deer body condition to determine whether this restoration should be maintained. Comparison of body condition among herds within the lower Columbia population and to herds outside the lower Columbia population will allow us to look at body condition related to the herd success.
9. Statistical or GIS support needed: None
10. Requested funding:

	Ibex Pro Ultrasound	$12,000
	Viewing Goggles	$1500
	Curvilinear Probe	$5500
	Total	$19,000

Literature Cited

Cook, R.C., T.R. Stephenson, W.L. Myers, J.G. Cook, and L.A. Shipley. 2006. Validating predictive models of nutritional condition for mule deer. J. Wildl. Manag. 76:1934–1943.

Cook, R.C., J.G. Cook, T.R. Stephenson, W.L. Myers, S.M. Mccorquodale, D.J. Vales, L.L. Irwin, P.B. Hall, R.D. Spencer, S.L. Murphie, K.A. Schoenecker, and P.J. Miller. 2010. Revisions of rump fat and body scoring indices for deer, elk and moose. J. Wildl. Manag. 74:880–896.

Stephenson, T.R., V.C. Bleich, B.M. Pierce, and G.P. Mulcahy. 2002. Validation of mule deer body composition using *in vivo* and post-mortem indices of nutritional condition. Wildl. Soc. Bull. 30:557–564.